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## RIGID SIDE-OPEN PACKAGE FOR TOBACCO ARTICLES

TECHNICAL FIELD

10       The present invention relates to a rigid package for tobacco articles.

      The present invention may be used to particular advantage in a rigid cigarette packet, to which the following description refers purely by way of example.

15

BACKGROUND ART

      A rigid cigarette packet normally comprises a cup-shaped bottom container having an open top end; and a cup-shaped top lid hinged to the container along a hinge  
20   to rotate, with respect to the container, between an open position and a closed position respectively opening and closing the open end of the bottom container. When the lid is in the closed position, the packet is substantially parallelepiped-shaped, and comprises two,  
25   respectively top and bottom, end walls, and a lateral surface bounded by the end walls and defined by two, respectively front and rear, major lateral walls, and two minor lateral walls. Four longitudinal edges are defined

between the minor lateral walls and the major lateral walls; eight transverse edges, smaller than the longitudinal edges, are defined between the lateral walls and the end walls; and the lid hinge is formed in the rear wall and parallel to the transverse edges defined between the rear wall and the end walls.

Rigid slide-open cigarette packets are also known, such as those described in Patent Application FR-2499947-A3, Patent US-4534463-A1, or Patent US-5080227-A1. A rigid slide-open cigarette packet comprises a first container for housing a group of cigarettes wrapped in a sheet of foil, and which in turn is housed inside a second container so as to slide with respect to the second container between an inserted position, in which the first container is fully inserted inside the second container, and an extracted position, in which part of the first container is extracted from the second container. Each container is substantially parallelepiped-shaped, and comprises two end walls; and a lateral surface bounded by the end walls and defined by lateral walls separated from one another by corresponding square longitudinal edges.

Though marketed, by being relatively easy to produce and generally popular with smokers, rigid cigarette packets of the above type fail to provide for effectively protecting the cigarettes inside the packet, in that, when the packet is carried in the user's pocket, both the lid of the hinged-lid packet and the inner container of

the slide-open packet tend to work open, thus resulting in fallout of the cigarettes.

#### DISCLOSURE OF THE INVENTION

5        It is an object of the present invention to provide a rigid package for tobacco articles, designed to eliminate the aforementioned drawbacks, and which, in particular, is cheap and easy to produce.

      According to the present invention, there is  
10    provided a rigid package for tobacco articles; the package comprising a first container having an open end, and a lid hinged to the first container to rotate between an open position and a closed position respectively opening and closing the open end; when the lid is in the  
15    closed position, the first container being substantially parallelepiped-shaped, and comprising two, respectively top and bottom, end walls, and a lateral surface bounded by the end walls and comprising two, respectively front and rear, major lateral walls, two minor lateral walls,  
20    four longitudinal edges, each defined between a major lateral wall and a minor lateral wall, and eight transverse edges, each defined between an end wall and a lateral wall; the lid being hinged along a hinge formed in the rear wall and substantially parallel to the  
25    longitudinal edges, and the lid comprising part of the end walls, part of the major lateral walls, and a minor lateral wall; and the package being characterized by comprising a second container for housing the tobacco

articles and which is housed in sliding manner inside the first container to slide, with respect to the first container, between an inserted position, in which the second container is fully inserted inside the first container, and an extracted position, in which part of the second container is extracted from the first container and projects from the open end of the first container.

According to the present invention, there is also provided a rigid package for tobacco articles; the package comprising a container having an open end, and a lid hinged to the container to rotate between an open position and a closed position respectively opening and closing the open end; when the lid is in the closed position, the container being substantially parallelepiped-shaped, and comprising two, respectively top and bottom, end walls, and a lateral surface bounded by the end walls and comprising two, respectively front and rear, major lateral walls, two minor lateral walls, four longitudinal edges, each defined between a major lateral wall and a minor lateral wall, and eight transverse edges, each defined between an end wall and a lateral wall; the lid being hinged along a hinge formed in the rear wall and substantially parallel to the longitudinal edges, and the lid comprising part of the end walls, part of the major lateral walls, and a minor lateral wall; and the container having a collar, which projects partly from the open end, defines a withdrawal

opening for the tobacco articles, at least at the top end wall of the container, and engages a corresponding inner surface of the lid when the lid is in the closed position; the package being characterized in that, when  
5 the lid is in the closed position, at least at the front wall, an edge of the lid is detached from an edge of the container to partly expose the portion of the underlying collar projecting from the open end.

10 BRIEF DESCRIPTION OF THE DRAWINGS

A number of non-limiting embodiments of the present invention will be described by way of example with reference to the accompanying drawings, in which:

Figure 1 shows a front view in perspective of a  
15 preferred embodiment of a rigid cigarette packet in accordance with the present invention and in a closed configuration;

Figure 2 shows a front view in perspective of the Figure 1 rigid cigarette packet in an open configuration;

20 Figure 3 shows an exploded view in perspective of the Figure 1 rigid cigarette packet;

Figure 4 shows a plan view of a blank by which to produce an inner container of the rigid cigarette packet in Figures 1 to 3;

25 Figure 5 shows a plan view of a blank by which to produce an outer container of the rigid cigarette packet in Figures 1 to 3;

Figure 6 shows a front view in perspective of an

alternative embodiment of a rigid cigarette packet in accordance with the present invention and in a closed configuration;

Figure 7 shows a front view in perspective of the  
5 Figure 6 rigid cigarette packet in an open configuration;

Figure 8 shows a plan view of a blank by which to produce the container of the rigid cigarette packet in Figures 6 and 7;

Figures 9 and 10 show front views in perspective of  
10 two variations of the rigid cigarette packet in Figures 6 and 7.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Number 1 in the accompanying drawings indicates as a  
15 whole a rigid cigarette packet for housing an orderly group 2 of cigarettes wrapped in a sheet of foil, and which comprises a cup-shaped container 3 having an open end 4. A cup-shaped lid 5 is connected to container 3 and hinged to container 3 along a hinge 6 (shown in Figures 3  
20 and 5) to rotate, with respect to container 3, between an open position (Figure 2) and a closed position (Figure 1) respectively opening and closing open end 4.

When lid 5 is in the closed position, container 3 is in the form of a substantially rectangular parallelepiped  
25 comprising a lateral surface; and two identical, flat, respectively top and bottom, end walls 7 and 8 facing and parallel to each other and bounding the lateral surface. The lateral surface of container 3 comprises two flat,

facing, parallel minor lateral walls 9, and two flat, facing major lateral walls 10 and 11 crosswise to minor lateral walls 9. More specifically, one major lateral wall 10 defines a front wall of container 3, and the  
5 other major lateral wall 11 defines a rear wall of container 3.

Four longitudinal edges 12 are defined between minor lateral walls 9 and major lateral walls 10, 11; and eight transverse edges 13 are defined between end walls 7, 8  
10 and lateral walls 9, 10, 11, are crosswise to longitudinal edges 12, and are divided into major transverse edges 13 defined between end walls 7, 8 and major lateral walls 10, 11, and minor transverse edges 13 defined between end walls 7, 8 and minor lateral walls 9.

15 More specifically, hinge 6 is formed in rear major lateral wall 11, and is parallel to longitudinal edges 12 of container 3, so that lid 5 comprises part of end walls 7, 8, part of major lateral walls 10, 11, and a minor lateral wall 9 of container 3.

20 A further container 14, housing group 2 of cigarettes, is housed in sliding manner inside container 3, and slides with respect to container 3 between an inserted position (Figure 1), in which container 14 is fully inserted inside container 3, and an extracted  
25 position (Figure 2), in which part of container 14 is extracted from container 3 and projects from open end 4 of container 3.

Container 14 is parallelepiped-shaped, and comprises

a top end wall 15; a bottom end wall 16; and a lateral surface bounded by end walls 15 and 16, and which comprises two opposite, parallel major lateral walls 17, and two opposite, parallel minor lateral walls 18  
5 separated from major lateral walls 17 by four longitudinal edges 19. Lateral walls 17 and 18 of container 14 are separated from end walls 15 and 16 by eight transverse edges 20, which are divided into four major transverse edges 20 between major lateral walls 17  
10 and end walls 15 and 16, and four minor transverse edges 20 between minor lateral walls 18 and end walls 15 and 16.

Top end wall 15 of container 14 comprises an open portion 21, which also extends along part of major  
15 lateral walls 17, and permits removal of the cigarettes from container 14 when container 14 is in said extracted position (Figure 2). More specifically, the cigarettes in group 2 of cigarettes inside container 14 are arranged parallel to longitudinal edges 19 of container 14, and  
20 therefore parallel to longitudinal edges 12 of container 3.

Longitudinal edges 19 of container 14 are rounded edges, i.e. each edge 19 is defined by a quarter of a cylindrical surface to connect respective lateral walls  
25 17 and 18 with a constant radius of curvature (preferably slightly larger than the radius of a cigarette); and transverse edges 20 of container 14 and all the edges 12 and 13 of container 3 are sharp square edges. In a



different embodiment not shown, longitudinal edges 12 of container 3 are also rounded edges. In a further embodiment not shown, some transverse edges 13 of container 3 and/or some transverse edges 20 of container 14 may be rounded non-square edges, so that both transverse edges 13 and/or 20 and longitudinal edges 12 and/or 19 are rounded non-square edges.

In further embodiments not shown, all the edges 19 and 20 of container 14 and all the edges 12 and 13 of container 3 are sharp square edges, or some of edges 19 and 20 of container 14 and/or some of edges 12 and 13 of container 3 are rounded or bevelled non-square edges. Alternatively, at least one lateral wall 9, 10, 11, 17, 18 of at least one container 3, 14 has an outwardly convex profile, is connected to at least one relative lateral wall 9, 10, 11, 17, 18 along a sharp longitudinal edge 12, 19, and subtends with said lateral wall 9, 10, 11, 17, 18 a substantially obtuse dihedral angle; or at least one lateral wall 9, 10, 11, 17, 18 of at least one container 3, 14 has an outwardly convex profile, is connected to at least one relative end wall 7, 8, 15, 16 along a sharp transverse edge 13, 20, and subtends with end wall 7, 8, 15, 16 a substantially obtuse dihedral angle.

By way of example, the embodiments described above may substantially reproduce the form of the cigarette packets described in Patent Applications EP-A1-1066206, IT-BO01A000584 or EP-A1-0764595.

When container 14 is in said inserted position (Figure 1), each lateral wall 17, 18 of container 14 obviously faces and is aligned with a corresponding lateral wall 10, 11, 9 of container 3. More specifically, both containers 14 and 3 are sized to house group 2 of cigarettes and container 14 respectively with a small amount of clearance, thus minimizing the amount of packing material required to produce containers 3 and 14, and also minimizing movement of group 2 of cigarettes inside container 14, and of container 14 inside container 3. Obviously, a certain amount of clearance must be allowed between group 2 of cigarettes and container 14, and between container 14 and container 3, to permit easy withdrawal by the user of the cigarettes from container 14, and of container 14 from container 3 respectively.

A minor lateral wall 9 of container 3 has a hole 22 (Figure 3) shaped and sized to permit insertion of the user's finger, and which provides for assisting expulsion of container 14 from container 3, by the user applying pressure on the minor lateral wall 18 of container 14 facing hole 22 when container 14 is in said inserted position (Figure 1).

In an embodiment not shown, packet 1 comprises stop means for limiting slide of container 14 with respect to container 3, and so preventing detachment of container 14 from container 3; which stop means are defined by two tongues projecting from major lateral walls 17 of container 14, and by two tongues projecting from major

lateral walls 10 and 11 of container 3. Each tongue of container 14 projects outwards of container 14 from a respective major lateral wall 17; each tongue of container 3 projects inwards of container 3 from a  
5 respective major lateral wall 10, 11, and is located close to open end 4 of container 3; and each tongue of container 3 is so located as to engage the corresponding tongue of container 14 as container 14 slides out of container 3, thus preventing detachment of container 14  
10 from container 3.

In accordance with an embodiment not shown, when lid 5 is in the closed position, at front major lateral wall 10 of container 3, an edge 31 of lid 5 is detached from an edge 31 of container 3 to partly expose the underlying  
15 container 14.

As shown in Figure 4, container 14 is formed from a corresponding flat blank 23, which is substantially in the form of an elongated rectangle, and the component parts of which are indicated, where possible, using the  
20 same reference numbers, with superscripts, as for the corresponding parts of container 14.

Blank 23 comprises two groups 24 of longitudinal crease lines 25, and a number of transverse crease lines 26 defining, between the two groups 24 of longitudinal  
25 crease lines 25, a panel 15' forming part of top end wall 15; a panel 17' forming one major lateral wall 17; a panel 16' forming bottom end wall 16; a panel 17" forming the other major lateral wall 17; and a panel 15" forming

part of top end wall 15. Panel 17' comprises two wings 18', which are located on opposite sides of panel 17', are separated from panel 17' by the two groups 24 of longitudinal crease lines 25, and form respective outer portions of minor lateral walls 18; and panel 17" comprises two wings 18", which are located on opposite sides of panel 17", are separated from panel 17" by the two groups 24 of longitudinal crease lines 25, and form respective inner portions of minor lateral walls 18. Wings 18" are connected to a further two wings 16", which form respective inner portions of bottom end wall 16; and each group 24 of longitudinal crease lines 25 comprises a number of longitudinal crease lines 25, and forms two rounded longitudinal edges 19 of container 14.

As shown in Figure 5, container 3 is formed from a corresponding flat blank 27, which is substantially rectangular, and the component parts of which are indicated, where possible, using the same reference numbers, with superscripts, as for the corresponding parts of container 3.

Blank 27 comprises two longitudinal crease lines 28, and a number of transverse crease lines 29 defining, between the two longitudinal crease lines 28, a panel 10' forming part of front major lateral wall 10; a panel 9' forming one minor lateral wall 9; a panel 11' forming the rear major lateral wall 11; a panel 9" forming the other minor lateral wall 9; and a panel 10" forming the rest of front major lateral wall 10. Panels 10', 11', 10" have

respective pairs of wings 7' and 8', which are located on opposite sides of panels 10', 11', 10", are separated from panels 10', 11', 10" by longitudinal crease lines 28, and form end walls 7, 8. Each wing 7', 8' of panel 5 11' has two wings 9''', which are located at opposite ends of wing 7', 8', are separated from wing 7', 8' by transverse crease lines 29, and form respective inner portions of minor lateral walls 9.

In the alternative embodiment shown in Figures 6 and 10 7, packet 1 only comprises container 3, in which group 2 of cigarettes is housed. More specifically, container 3 comprises a collar 30 projecting partly from open end 4, and which engages a corresponding inner surface of lid 5 when lid 5 is in the closed position. More specifically, 15 the collar 30 in Figure 7 has rounded exposed longitudinal edges. Alternatively, the exposed longitudinal edges of collar 30 may be bevelled or square. More specifically, the cigarettes in group 2 of cigarettes inside container 3 are parallel to 20 longitudinal edges 12 of container 3, and collar 30 defines a cigarette withdrawal opening at top end wall 7, front major lateral wall 10, and a minor lateral wall 9.

When lid 5 is in the closed position, at front major lateral wall 10, an edge 31 of lid 5 is detached from an 25 edge 31 of container 3 to partly expose the portion of the underlying collar 30 projecting from open end 4. Along front major lateral wall 10 of container 3, the edge 31 of lid 5 is parallel to the edge 31 of container

3, so that the distance between edge 31 of lid 5 and edge 31 of container 3 is constant. Moreover, when lid 5 is in the closed position, at end walls 7 and 8, edge 31 of lid 5 substantially contacts edge 31 of container 3.

5 In the alternative embodiments shown in Figures 9 and 10, along front major lateral wall 10 of container 3, the distance between the edge 31 of lid 5 and the edge 31 of container 3 varies. As shown in Figures 6, 7, 9, 10, the edge 31 of lid 5 and the edge 31 of container 3 may  
10 obviously be defined by a straight line (Figures 6 and 7), by a bent line (Figure 10), or by a curved line (Figure 9).

As shown in Figure 8, container 3' in Figures 6 and 7 is formed from a corresponding flat blank 27, which is  
15 substantially rectangular, and the component parts of which are indicated, where possible, using the same reference numbers, with superscripts, as for the corresponding parts of container 3.

Blank 27 comprises two longitudinal crease lines 28,  
20 and a number of transverse crease lines 29 defining, between the two longitudinal crease lines 28, a panel 10' forming part of front major lateral wall 10; a panel 9' forming one minor lateral wall 9; a panel 11' forming the rear major lateral wall 11; a panel 9" forming the other  
25 minor lateral wall 9; and a panel 10" forming the rest of front major lateral wall 10. Panels 10', 11', 10" have respective pairs of wings 7' and 8', which are located on opposite sides of panels 10', 11', 10", are separated

from panels 10', 11', 10" by longitudinal crease lines 28, and form end walls 7, 8. Each wing 7', 8' of panel 11' has two wings 9''', which are located at opposite ends of wing 7', 8', are separated from wing 7', 8' by transverse crease lines 29, and form respective inner portions of minor lateral walls 9.

Tests have shown that the anatomical shape of cigarette packets 1 as described above provides for easy handling by the user. Moreover, the fact that lid 5 is located to the side of container 3 (comprising part of end walls 7, 8, part of major lateral walls 10, 11, and a minor lateral wall 9) safeguards against accidental opening of lid 5 when packet 1 is in the user's pocket, thus effectively protecting the cigarettes inside packet 1.

Given the numerous advantages of cigarette packets 1 as described above, the form of packets 1 may also be applied completely to the manufacture of other types of rigid containers for tobacco articles, such as cartons of packets of cigarettes, or cigar packets.